



What is a pesticide?

A pesticide is a substance used to kill, repel or deter plants, insects, other animals or microorganisms. Pesticides include herbicides, insecticides, rodenticides, and fungicides, as well as chemicals that kill bacteria and viruses.

Contact Pesticides: These pesticides kill organisms by coming in direct contact with them. These are usually in the form of powders or liquids. This can affect bees visiting plants at the time of application.

Systemic Pesticides: These pesticides move through the plant tissues and can be present in the leaves, stems, pollen and nectar. Bees may collect contaminated pollen and nectar and bring it back to their colony. These pesticides tend to last longer in the environment.

Either type can have dire effects on bee populations when not used properly.



Plight of the Pollinator:

How You and Your Garden Are Needed



The **North American Pollinator Protection Campaign** is a collaborative body of over 140 organizations that work for the protection of pollinators across Mexico, Canada and the United States. The **NAPPC Pesticide Task Force** produced this brochure for your use and information. Feedback is welcome. For more information please contact info@pollinator.org or 415-362-1137 or visit www.pollinator.org



NAPPC



Prepared by the
Rights of Way Task Force of
the North American Pollinator
Protection Campaign (NAPPC)



What are pollinators and why should you care?

Pollinators are bees, butterflies, hummingbirds and other animals which feed on flowers, transferring pollen in the process. Many plants need pollen to be transferred in order to produce seed and fruit. As a result, pollinators are needed to produce many fruits and vegetables. Approximately 1 out of every 3 bites of food you eat comes from the work of a pollinating animal, including many garden fruits and vegetables. And it's not just good for humans; pollination produces seeds that also feed birds and mammals.

Pollinators are also vital for the production of seeds for the next generation for many plant species. Many blooming plants depend upon pollination for their survival.

When you use pesticides, you may inadvertently hurt pollinators and other beneficial insects.

Photo Kim Davis & Mike Stangeland



Pollinator-Friendly Pest Control Strategies for Your Lawn and Garden

By carefully diagnosing your pest problem, and often by having some patience with a situation, you may save yourself money and the unintended consequence of harming non-target species such as pollinators. Here are some alternatives to the use of garden chemicals:

- ☘ **Plant native plant species** to support pollinators; they are naturally more resilient to pests. Grow a variety of plants that will provide nectar and pollen for pollinators all season long
- ☘ **Try methods of Integrated Pest Management (IPM)** that include many ways to control pests. IPM will help save time and money in an environmentally friendly way.
 - http://www.extension.org/pages/Garden%2C_Lawn%2C_and_Landscape_Pests
 - <http://paipm.cas.psu.edu/1314.htm>
- ☘ **Visit websites to learn about alternatives to pesticides**
 - <http://www.epa.gov/pesticides/controlling/garden.htm>
 - <http://www.centalsan.org/index.cfm?navid=166>
 - <http://www.pesticide.org/>
- ☘ **Use mulch and weed barriers**; pull weeds before they go to seed
- ☘ **Rotate crops** in your garden to avoid reinfestation
- ☘ **Aerate your lawn** and overseed with grass seed to discourage weeds
- ☘ **Keep your lawn grass long.**
This shades out weeds, making it harder for them to grow, and will also help conserve water. This also encourages deep roots and healthier overall grass.
- ☘ **Consider using non-toxic traps for pests**

Remember that many native pollinators like bumble bees live in natural areas and also play essential roles in pollination. Be especially careful when trying to control pests in or near these areas.

Remember that all beautiful butterflies started life as caterpillars, feeding on plants. Learn what type of insect is eating your plants, before you inadvertently kill those butterflies and other beautiful and beneficial insects.



Photo Greg Lavity

If you must use pesticides:

- ☘ **Read and follow directions** carefully, use only the minimum amount of pesticide required and avoid re-applying unnecessarily. (Sometimes it takes several days to see effects.)
- ☘ **If you have questions**, contact your local extension office or visit this web site where you can directly get help:
 - http://www.extension.org/pages/Garden%2C_Lawn%2C_and_Landscape_Pests
- ☘ **Choose a pesticide** that will affect only your particular pest (not a broad spectrum pesticide)
- ☘ **Use the pesticides that will pose the least hazard**, (those that have the lowest concentration of active ingredients and will persist the shortest period of time). Look for pesticides that do not include bee warning statements.
- ☘ **Dispose of unused pesticides** appropriately to avoid contamination of the environment.

Application tips:

- ☘ **Avoid application** of pesticides to flowers or blooming plants whenever possible.
- ☘ **Avoid using on rainy days** or near streams and ponds.
- ☘ **Spot treat** directly and only where needed.
- ☘ **Apply pesticides just after dawn or just before sunset** or on overcast days when pollinator visitation is low.

If you want more information please contact www.pollinator.org

This brochure was produced by the North American Pollinator Protection Campaign (NAPPC) Pesticide Task Force with members from industry, American and Canadian universities, government agencies and beekeepers.



Photo Greg Lavity